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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/655,535	09/05/2003	Naveen Kumar Kakani	59643.00303	5576

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EXAMINER

LAM, DUNG LE

ART UNIT PAPER NUMBER

2617

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/655,535		KAKANI, NAVEEN KUMAR	
	Examiner		Art Unit	
	Dung Lam		2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/21/06 has been entered.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims **1 and 10** are rejected under 35 U.S.C. 102(e) as being anticipated by **Zimmerman et al** (US Patent No. 6785252).

3. Regarding **claim 1**, Zimmerman teaches a method, comprising: estimating traffic in an uplink; and allocating uplink resources based on said step of estimating (the base station performs an estimate of the uplink traffic to allocate uplink bandwidth, Col. 24, lines 26-29); wherein the estimating is performed following the transmission of a signal in a downlink ("poll-me" protocol requires a polling signal transmitted from a base station which reads on the very broad limitation of "the transmission of a signal in a downlink "

Art Unit: 2617

Col. 24 ln 64 - col. 25 ln 5; details of the "poll-me" process col. 21 line 14-56, Step 936 occurs after Step 932 Fig. 10; similar concept is shown in Fig. 5 Step 508 – 518).

4. Regarding **claims 10**, it is an apparatus claim corresponding to claim 1. Therefore, it is rejected for the same reasons as claim 1 respectively (see claim 1 above).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims **2 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Zimmerman et al** (US Patent No. 6785252) in view of **Wallentin et al.** (US Publication 2005/0013287).

7. Regarding **claim 2**, Zimmerman teaches a method according to claim 1 (see claim 1 above). However, Zimmerman fails to expressly teach that the step of associating the traffic with a bulk transmission control protocol uplink data transfer, and estimating the traffic in the uplink for a given transfer block to be identical as for a previous transfer block. In an analogous art, Wallentin teaches a type of bulk transmission control protocol traffic, which is known in the art to be bursty and asymmetric (Col. 4, paragraph 36). Furthermore, Wallentine discloses a method of using the content of received data packets sent in the uplink or downlink to make

Art Unit: 2617

predictions of the expectable traffic on the uplink or downlink (Col. 3, paragraph 33), thereby suggesting that uplink traffic can be estimated based on the previous sent data. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to provide a method of bandwidth allocation of an uplink of bulk transmission control protocol traffic type to be based on the estimation of the previous data transfer block to utilize radio resource more efficiently.

8. Regarding **claims 11**, it is an apparatus claim corresponding to claim 2. Therefore, it is rejected for the same reasons as claim 2 respectively (see claim 2 above).

9. Claims **3 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Zimmerman et al** (US Patent No. 6785252) in view of **Wallentin et al.** (US Publication 2005/0013287) in further view of **Love et al.** (US Publication 2004/0219917).

10. Regarding **claim 3**, Zimmerman teaches a method according to claim 1 (see claim 1 above). However, Zimmerman fails to teach a step of associating the traffic with a bulk transmission control protocol downlink data transfer, and wherein the estimating step comprises estimating the traffic in the uplink for a given transfer block to be an acknowledgement of the traffic in a downlink. In an analogous art, Wallentin teaches that one of the expected major protocol is transmission control protocol which can have two type of data: "interactive" or "background" which is also known in the art as bulk transmission control protocol since it is characterized as bursty and asymmetric (Col. 4, paragraph 36). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to have a bandwidth allocation that account for the characteristics of bulk TRANSMISSION CONTROL

Art Unit: 2617

PROTOCOL to have a more robust and versatile allocation scheme that can handle bulk transmission control protocol data. In addition, Love teaches a method of making use of the acknowledgement to determine the uplink transmission activity (Col. 7, paragraph 64). It is also known in the art, that in transmission control protocol transmission, ACK is used to detect congestion and thus the system stops sending more packets if ACK is not received. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to estimate the uplink traffic based on the acknowledgement of the downlink traffic to increase resource efficiency.

11. Regarding **claims 12**, it is an apparatus claim corresponding to claim 3. Therefore, it is rejected for the same reasons as claim 3 respectively (see claim 3 above).

12. Claims **4 and 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Zimmerman et al** (US Patent No. 6785252) in view of **Wallentin et al.** (US Publication 2005/0013287) in further view of **Haartsen** (US Publication 2005/0048985).

13. Regarding **claim 4**, Zimmerman teaches a method according to claim 1 (see claim 1 above). However, Zimmerman fails to teach a step of associating the traffic with an interactive transmission control protocol data transfer, and wherein the step of estimating comprises estimating the traffic in the uplink to be identical to the traffic in a downlink. In an analogous art, Wallentin teaches that one of the expected major protocols is TCP, which can have two type of data: "interactive" or "background". (Col. 4, paragraph 36). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to have a bandwidth allocation that account for the characteristics of bulk TCP to have a more robust and

Art Unit: 2617

versatile allocation scheme that can handle interactive TCP data. In another analogous art, Haartsen teaches a method of radio resource management where the bandwidth in the uplink is identical to the bandwidth in the downlink (Col. 4, paragraph 42). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify the bandwidth allocation to estimate the uplink traffic to be the same as the downlink to make a more real-time based and flexible bandwidth allocation algorithm.

14. Regarding **claims 13**, it is an apparatus claim corresponding to claim 4. Therefore, it is rejected for the same reasons as claim 4 respectively (see claim 4 above).

15. Claims **5 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Zimmerman et al** (US Patent No. 6785252) in view of **Love et al.** (US Publication 2004/0219917) in further view of **Patel** (US Patent No. 6697378).

16. Regarding **claim 5**, Zimmerman teaches a method according to claim 1 (see claim 1 above). Zimmerman fails to teach a step of estimating comprises estimating the traffic in the uplink to include an acknowledgement of the traffic in a downlink. In an analogous art, Love teaches a method of making use of the acknowledgement to determine the uplink transmission activity (Col. 7, paragraph 64). In addition, Patel also disclose that TCP uses window-based flow control in acknowledgement to advertise how much space the receiver has available for additional data (Col. 1 lines 60-67). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify the estimating traffic step to include an acknowledgement of the traffic of the downlink to provide a more efficient use resource.

17. Regarding **claims 14**, it is an apparatus claim corresponding to claim 5. Therefore, it is rejected for the same reasons as claim 5 respectively (see claim 5 above).

18. Claims **6 –7 and 15 -16** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Zimmerman et al** (US Patent No. 6785252) in view of **Haartsen** (US Publication 2005/0048985).

19. Regarding **claim 6**, Zimmerman teaches a method according to claim 1 (see claim 1 above). However, Zimmerman fails to teach the step of estimating comprises estimating the uplink based upon a downlink traffic. In another analogous art, Haartsen teaches a method of radio resource management where the bandwidth in the uplink is identical to the bandwidth in the downlink (Col. 4, paragraph 42). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify the bandwidth allocation to estimate the uplink traffic to be based on the downlink to make a more real-time based and flexible bandwidth allocation algorithm.

20. Regarding **claim 7**, Zimmerman and Haartsen teach a method according to claim 6 (see claim 6 above). Haartsen further teaches the step of estimating comprises estimating an uplink traffic to be an identical as a downlink traffic (bandwidth in the uplink is identical to the bandwidth in the downlink, Col. 4, paragraph 42). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify the bandwidth allocation to estimate the uplink traffic to be the same as the downlink to make a more real-time based bandwidth allocation algorithm.

21. Regarding **claims 15 and 16**, it is an apparatus claim corresponding to claim 6 and 7 respectively. Therefore, it is rejected for the same reasons as claim 6 respectively (see claim 6 and 7 above).

22. Claims **8, 9, 17 and 18** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Zimmerman et al** (US Patent No. 6785252) in view of **Haartsen** (US Publication 2005/0048985) in further view of **Patel** (US Patent No. 6697378).

23. Regarding **claim 8**, Zimmerman and Haartsen teach a method according to claim 6 (see claim 6 above). However, they fail to teach a step of estimating an uplink traffic to be an acknowledgement of the downlink traffic. In the same field of endeavor, Patel also disclose that TCP uses window-based flow control in acknowledgement to advertise how much space the receiver has available for additional data (Col. 1 lines 60-67). Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to estimating the uplink traffic to be an acknowledgement of the traffic of the downlink to provide a more efficient usage of resource.

24. Regarding **claim 9**, Zimmerman and Haartsen teach a method according to claim 6 (see claim 6 above). However, they fail to teach a step of estimating comprises estimating an uplink traffic to be identical as a downlink traffic together with an acknowledgement of the downlink traffic. In the same field of endeavor, Patel also disclose that TCP uses window-based flow control in acknowledgement to advertise how much space the receiver has available for additional data (Col. 1 lines 60-67). In addition, it is known in the art that ACK can be sent by

Art Unit: 2617

either uplink or downlink in TCP transmissions. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to estimate the uplink traffic to include both the ACK and data of the downlink to provide a more accurate bandwidth allocation scheme.

25. Regarding **claims 17-18**, they are apparatus claims corresponding to claims 8-9 respectively. Therefore, they are rejected for the same reasons as claims 8-9 respectively (see claims 8-9 above).

26. Claims **19** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Zimmerman et al** (US Patent No. 6785252) in view of **Cave** (US Patent No. 6868273).

27. Regarding **claims 19**, Zimmerman teaches all the limitations according to claim 10 (see claim 10 above). However, he fails to teach a mobile communication system in which the estimating means uplink and an uplink allocation resource are provided in a radio access network. In analogous art Cave teaches that a RAN is used to perform call admission control for allocation evaluation. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to perform the estimating and allocation of the uplink resource at the RAN.

28. Claims **20** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Zimmerman et al** (US Patent No. 6785252) in view of **Wallentin et al.** (US Publication 2005/0013287).

29. Regarding **claims 20**, Zimmerman teaches all the limitations according to claim 10 (see claim 10 above). However, he fails to teach specifically a mobile communication system in which the estimating means uplink and an uplink allocation resource are provided in a serving General Packet Radio Service support node. However, Wallentin teaches a method of improving efficient usage of radio network resources (abstract), which may use any type of

traffic control nodes, which can be a serving support GPRS node [0044]. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to estimate the bandwidth allocation at the SGSN.

Response to Arguments

Applicant's arguments filed 9/7/06 have been fully considered but they are not persuasive.

Applicant argues that Zimmerman fails to teach the limitation of "wherein the estimating is performed following the transmission of a signal in a downlink" with the reasoning that the CPE bandwidth request cannot be treated as a downlink signal.

The examiner respectfully disagrees. The broad limitation of "estimating step is performed following the transmission of a signal in the downlink" is broadly interpreted as, "the step of estimating occurs **after** some downlink signal being sent from the base station". As addressed in above rejection and illustrated in Fig. 10 and 5, the base station first transmits a polling signal to the CPE in Step 932 (downlink signal). **After** Step 932, the base station performs the bandwidth estimation and allocation in Step 936 (estimating). Therefore, Zimmerman's teaching clearly reads on the broad limitation of "the bandwidth estimation **following** a downlink signal transmission".

Furthermore, the examiner notes that the "**wherein**" clause is functional language and is not an actual step and does not have to be treated. Nonetheless, for applicant's convenience, the examiner did address the limitation.

Claim 10 is a system claim corresponding method claim 1. Therefore, the reasons for maintaining the rejection for claim 10 are the same for claim 1.

Art Unit: 2617

Claims 2-9 and 11-20 are also unpatentable and remained rejected due to their dependency on their respective independent claims 1 and 10.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Lam whose telephone number is (571) 272-6497. The examiner can normally be reached on M - F 9 - 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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